

# **ENVIRONMENTAL ASSESSMENT LIVESTOCK GRAZING AUTHORIZATION**

**EA Number      CA 170-03-15**

## **Allotment Number and Name(s)**

**6019    West Crater Mountain  
6033    Tinemaha  
6048    West Santa Rita**

**BLM Bishop Field Office  
Prepared  
July 2003**

## CHAPTER 1: INTRODUCTION

The Bureau of Land Management (BLM) is proposing to issue a 10 year long grazing permit on these allotments to authorize livestock grazing. The approximate allotments Public Land acreage are:

<u>Allotment Name</u>	<u>Public Land acres</u>
West Crater Mountain	6,540
Tinemaha	3,681
West Santa Rita	321

The allotments are located in the Owens Lake, and Owens Valley Area of the Bishop Field Office. Their elevation range is between 3,800 and 6,500 feet. Vegetation communities are a mix of Great Basin Saltbush Scrub and Mixed Desert Scrub.

### **Need for the Proposed Action**

The proposed action is needed to authorize grazing in accordance with grazing regulation 43 CFR 4100 and be consistent with the provisions of the *Taylor Grazing Act*, *Public Rangelands Improvement Act*, and *Federal Land Policy and Management Act*. Action may be required to maintain or improve resource conditions including rangeland health. Status of existing permit/lease: The grazing permits for these allotments will expire on 2/28/01. In accordance with the *National Environmental Policy Act* (NEPA), an Environmental Assessment (EA) must be prepared to analyze the affects of livestock grazing, in order to determine if re-authorizing the grazing permit(s) is appropriate.

**Plan Conformance:** The proposed action is subject to the following plan:

Bishop Resource Management Plan (RMP), approved on March 23, 1993.

The proposed action has been determined to be in conformance with this plan as required by regulation (43 CFR §1610.5-3(a)).

Remarks: The proposed action will occur in an area identified for livestock grazing in the Bishop Resource Management Plan. The proposed action is consistent with the land use decisions and resource management goals and objectives of the plan, pages 8 thru 23 and 40 thru 46.

The three allotments meet all of the Secretary of Interior's Approved Rangeland Health Standards as indicated in the BLM California Rangeland Health Environmental Impact Statement and Decisions Record of July 2000.



Rangeland Health field assessments of the Standards were completed on these dates:

West Crater	April 1999
Tinemaha	May 1999
West Santa Rita	April 1999

A database detailing the results of these assessments has been completed and is located in the resources/images/range computer directory at the BLM Bishop Field Office.

### **Relationship to Statutes, Regulations, and Plans**

#### **Endangered Species**

Several of the allotments are within the range of federally listed threatened or endangered species. However, no Endangered Species are present or likely to occur, based on historical records, field monitoring, and/or habitat suitability in these allotments. Pursuant to Section 7 of the Endangered Species Act, formal consultation with the Fish and Wildlife Service (FWS) is required on all allotments for which livestock grazing may affect listed species. The stipulations of any grazing permit may be modified to conform to the terms and conditions specified in a FWS biological opinion to minimize take of listed animal species. In addition, the terms and conditions of any grazing permit may also be modified to conform to decisions made to achieve recovery plan objectives as determined through subsequent land use plan amendments or revisions. All Section 7 consultations with FWS were completed in 2000.

#### **Special Status Plant Species**

Special Status Plant Species are those species that have been listed by the California Native Plant Society as List 1B species, which includes plants that are rare, threatened or endangered in California and elsewhere. All of the plants constituting List 1B meet the definition of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. The Bishop Resource Management Plan (RMP, 1993, p. 17) stipulates yearlong protection of sensitive plants (Special Status Plants) and their associated habitats.

The following allotments contain or are in the vicinity of these CNPS List 1B species;

Allotment	Plant Species	Population Trend
West Crater Mountain	<i>Calochortus excavatus</i> (Inyo Mariposa lily)	Perennial – Unknown - USFS
Tinemaha	<i>Oryctes nevadensis</i> (Nevada ocyctes)	Annual – Unknown – Los Angeles Dept. of Water and Power

West Santa Rita	<i>Scelerocactus polyancistrus</i> (Mojave fish-hook cactus) – List 4*	Perennial – Static to increasing
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List 4\* - Plants of limited distribution – Watch List

No grazing impacts to the Mojave fish-hook populations are occurring. Plants appear to be well distributed and vigorous. The other rare plant populations occur on adjoining Los Angeles Department of Water and Power lands and USFS – Inyo National Forest.

### Cultural Resources

California BLM has the responsibility to manage cultural resources on public lands pursuant to the 1966 National Historic Preservation Act, the 1980 Rangeland Programmatic Memorandum of Agreement with the Advisory Council on Historic Places (WO IM 80-369), the 1997 Programmatic Agreement Among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Manner in Which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act, the State Protocol Agreement Between the California State Director of the Bureau of Land Management and the California State Historic Preservation Officer (1998) and other internal policies.

The stipulations of any grazing permit may be modified to reflect the presence of cultural resources. Background site record and literature review will be conducted as a minimum level of review as part of the permit renewal EA. Present inventory will focus on known or suspected areas of historic ground disturbing activities associated with livestock grazing such as water sources, corrals, supplemental feeding areas, bedding areas, salt block stations. In general, following the Bishop Field Office research design for grazing assessments (Halford 1999), all areas with a high probability for the congregation of cattle and for the occurrence of significant cultural resources have been field evaluated. In general, use is low on the allotments. One site was identified in a high congregation area on the West Crater allotment near a trough. The trough has been out of use in recent years and was decommissioned to curtail any further impact to the site.

### Wilderness

These allotments do not occur within any designated Wilderness Area. However, approximately half of the Crater Mountain Wilderness Study Area (WSA CA-010-062) lies in West Crater Mountain allotment. Wilderness values are described in the 1979 Final Wilderness Intensive Inventory Report while the WSA's existing range and other improvements are identified in the 1990 California Statewide Wilderness Study Report (WSR). The Interim Management Policy for Lands Under Wilderness Review (IMP) provides direction for grazing management in WSAs until the WSA is designated wilderness or released from the wilderness review process. Continued livestock grazing within this allotment would be in compliance with the BLM Wilderness Interim Management Policy (IMP) (Appendix A.).

## Wild and Scenic Rivers

The allotments contain no designated Wild and Scenic Rivers nor do they contain creeks determined to be eligible for wild and scenic study.

## Water Quality

Direction for implementation of the Federal Clean Water Act (CWA) of 1972 (P.L. 92-500, as amended) is provided by the Code of Federal Regulations (40 CFR) and by a variety of USEPA guidance documents on specific subjects. To meet the requirements of the CWA on public lands, BLM is currently developing a state-wide water quality management plan under an MOU with the California Water Resources Control Board. As part of the water quality plan, BLM is required to submit a listing of Best Management Practices (BMPs) to the state and to the U.S. Environmental Protection Agency for approval. Pursuant to the decisions affecting water quality in the Bishop Resource Management Plan, BMPs for the Field Office area have been submitted to meet the requirements under the CWA.

Section 4180.1 of the Grazing Administration Regulations (4180.1, Federal Register Vol 60, No. 35, pg.9970) directs that certain conditions of rangeland health exist on public lands which include the statement that “water quality complies with State water quality standards and achieves, or is making significant progress toward achieving, established BLM management objectives....”. The Standards and Guidelines for Rangeland Health in the Central California area, as it applies to surface and groundwater resources and their quality have as a primary objective to maintain the existing quality and beneficial uses of water, protect them where they are threatened (and livestock grazing activities are a contributing factor), and restore them where they are currently degraded (and livestock grazing activities are a contributing factor). In the following instances the objective becomes a higher priority:

- (a) where beneficial uses of water bodies have been listed as threatened or impaired pursuant to Section 303(d) of the CWA;
- (b) where aquatic habitat is present or has been present for Federal threatened or endangered, candidate and other special status species dependent on water resources; and
- (c) in designated water resource sensitive areas such as riparian and wetland areas.

## Air Quality

The Owens Lake Management Area and the southern portion of the Owens Valley Management Area, south of Tinemaha Reservoir(Figure 1), falls within a Federal Air Quality Non-Attainment/Maintenance Area and is subject to the following legal requirement:

Section 176 (c) of the Clean Air Act (CAA), as amended (42 U.S.C. 7401 et seq.) and

regulations under 40 CFR part 93 subpart W, with respect to the conformity of general Federal actions to the applicable state implementation plan (SIP) apply to projects within non-attainment areas. Under those authorities, "no department, agency or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve any activity which does not conform to an applicable implementation plan." Under CAA 176(c) and 40 CFR part 93 subpart W, a Federal agency must make a determination that a Federal action conforms to the applicable implementation plan before the action is taken.

40 CFR Part 93.153 Applicability.

( c ) The requirements of this subpart shall not apply to the following Federal actions:

( iii ) Continuing and recurring activities such as permit renewals where activities will be similar in scope and operation to activities currently being conducted.

The Great Basin Unified Air Pollution Control District (GBUAPCD) has state air quality jurisdiction over the Owens Valley Management Area.

## **CHAPTER 2: PROPOSED ACTION AND ALTERNATIVES**

### **Proposed Action**

The proposed action is to continue present management, but with revised Terms and Conditions to the expiring Grazing Permits. The completed Rangeland Health allotment assessments document that continuation of livestock grazing, in the same manner and degree, complies with the intent of the Rangeland Health initiative and its Standards.

Terms and Conditions will be incorporated into the reissued Grazing Permits to ensure compliance with the Rangeland Health Standards and Guidelines and Bishop RMP decisions pertinent to livestock grazing.

A. Livestock Numbers and Season of Use

<u>Allotment Name</u>	<u>Number</u>	<u>Kind</u>	<u>Season of Use</u>	<u>% Public Land</u>	<u>Permitted Use (animal unit months)</u>
West Crater Mountain	165	cattle	4/01 – 5/31	100	331
					Total 331
Tinemaha	37	cattle	12/01 – 5/31	100	221
					Total 221
West Santa Rita	3	cattle	10/10 – 12/31	100	8
					Total 8

B. Range Improvements

There are no existing, nor any proposed new improvements, that need to be eliminated or constructed in order to maintain or achieve rangeland health.

C. Measures to Maintain or Achieve Standards (Revised Terms and Conditions of the Grazing Permit).

1. Grazing use is not to exceed 40% of annual growth on key forage species (all allotments) and leave a 4-6" stubble height on riparian vegetation.
2. No salt or other nutrient supplement placement or sheep bedding within 1/4 mile of creeks, aspen groves, meadows, sage grouse strutting grounds, or special status plant habitat.
3. No supplemental feeding (actual forage, i.e. hay) on public land or private land that is unfenced from the public land at any time.
4. No trailing through a neighboring allotment without the BLM's authorization.
5. Grazing permits shall contain terms and conditions appropriate to achieve management and resource condition objectives for the public land, or to assist in the orderly administration of the public rangelands and to ensure conformance with the provisions of Subpart 4180 (Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration). This is per Subpart 4130.3 Terms & Conditions and Subpart 4130.3-2 Other Terms and Conditions.
6. The authorized officer may modify terms and conditions of the permit when the active use or related management practices are not meeting the land use plan, allotment management plan or other activity plan, or management objectives, or is not in conformance with the provisions of 4180 (Fundamentals of Rangeland Health and Standards & Guidelines for Grazing Administration). This is per Subpart 4130.3-3 Modification of permits or leases.

#### D. Monitoring

Monitoring would consist of documenting utilization levels to ensure that grazing use does not exceed the 40% level. This would be done annually to assure compliance with terms and conditions of the permit. No long term monitoring methods to determine condition and trend are planned. At some future date, a reassessment of rangeland health may be done using the existing methodology as comparison to current conditions.

#### **No Grazing Alternative**

This alternative would result in not reissuing a grazing permit for these allotments. As a result, grazing would be eliminated. This would be a permanent cancellation. The BLM would be required to complete an RMP Plan Amendment process in accordance with BLM Planning Regulations.

### **CHAPTER 3: ENVIRONMENTAL ANALYSIS**

The 18 individual resource templates below combine, by resource, the affected environment, environmental consequences, and consultation sections of required elements of the EA. They include the standard critical elements of the human environment (appendix 5, BLM NEPA Handbook, as amended) and several other resource elements commonly affected by livestock grazing.

#### **Required Elements:**

1. Air Quality
2. Areas of Critical Environmental Concern (ACEC)
3. Cultural Resources
4. Environmental Justice
5. Farmlands, Prime or Unique

The proposed action and no grazing alternatives would have no affect on Farmlands because none are present on any of the three allotments.

6. Flood plains

The proposed action and no grazing alternatives would have no affect on flood plains because there are none on the public lands on any of the three allotments.



7. Invasive, Non-native Species

8 Native American Concerns

The Native American Tribal Councils, for the seven tribes that reside within the Bishop Field Office jurisdiction, have been contacted and have not expressed any specific concerns relative to the affects of livestock grazing for these three allotments. There are general concerns that are addressed below.

9. Recreation

The proposed action and no action alternative would have no affect on recreation because of the lack of proposed facilities or management practices that could potentially alter existing recreation uses or use patterns.

10. Social and Economic

11. Soil

12. Waste, Hazardous or Solid

The proposed action and no grazing alternatives would have no affect on Hazardous or Solid Waste as there are no sites occurring on these three allotments.

13. Water Quality, Surface and Ground

14. Wetlands/Riparian Zones

15. Wild and Scenic Rivers

There are no designated Wild and Scenic Rivers within these three allotments.

16. Wilderness

These allotments do not occur within any designated wilderness area. However, proposed grazing within the Wilderness Study Area mentioned above in Relationship to Statutes, Regulations, and Plans would not impair wilderness qualities. Wilderness values of naturalness, outstanding opportunities for solitude, and a primitive or unconfined type of recreation would remain unaffected. If ecological improvements in plant and wildlife habitat occur, then naturalness would be enhanced. For additional information regarding special features such as cultural values, wildlife, plants, etc., refer to the specific narrative addressing these values in other parts of this document. In conclusion, proposed grazing within allotments would conform with the BLM Wilderness Interim Management Policy (IMP).

17. Wildlife

18. Wild Horses and Burros

The proposed action and no grazing alternatives would have no affect on Wild Horses and Burros as there are no populations occurring on these three allotments.

19. Vegetation

## **AIR QUALITY**

### **A. Affected Environment**

One allotment occurs within a federal non-attainment/maintenance area within the Great Basin Unified Air Pollution Control District's (GBUAPCD) jurisdictional boundaries. The allotment that occurs within a federal non-attainment/maintenance area is West Santa Rita.

### **B. Environmental Consequences**

#### **1. Impacts of Proposed Action**

Fugitive dust emissions could occur due to the soil disturbance as a result from the trampling action of the livestock when soil moisture levels are low. Support vehicle use on the access roads will generate small amounts of PM<sub>10</sub> emissions throughout the grazing area and could carry soils onto the paved roads which would increase entrainment PM emissions. Ruminant animals emit methane gas which is a precursor emission for ozone. The support vehicles emit various precursor emissions for ozone. Actual emissions amounts from this grazing activity are negligible. No significant offsite impacts are anticipated.

#### **2. Impacts of No Grazing**

Same as above.

#### **3. Cumulative Impacts**

The proposed action area is within the jurisdiction of the Great Basin Unified Air Pollution Control District.

The expected emission levels are within the levels in the attainment demonstrations in the SIPs and the cumulative NAAQS 24 hour and one year PM<sub>10</sub> emission standards and the one hour ozone emission standards and are not likely to result in or contribute to exceedences of the National Ambient Air Quality Standards. These impacts would be the same for both Alternatives.

**C. Consultation** Jim Parker, Great Basin Unified Air Pollution Control District( GBUAPCD)

**D. Maps** GBUAPCD map of PM10 non-attainment areas (Figure 1)

**E. References** None

## **AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)**

### **A. Affected Environment**

Approximately 7 sections (4,480 acres) of the West Crater Mountain allotment occur within the Crater Mountain ACEC. The ACEC was designated in 1993, encompassing nearly 5,735 acres, in recognition of the unique assemblage of resource values. The goals of the ACEC are to protect scenic values, enhance recreation opportunities, and provide for interpretation of geologic features.

### **B. Environmental Consequences**

#### **1. Impacts of Proposed Action**

Cattle, customarily, do not frequent the Crater Mountain ACEC central area. This is due to the rough volcanic topography and the distance from available water. Rarely is there any problem with the cattle from the West Crater Mountain allotment entering the ACEC. Reissuing of the grazing permit would not create any new impacts.

#### **2. Impacts on No Grazing**

This alternative would result in an absolute elimination of the possibility of cattle using the West Crater Mountain allotment.

#### **3. Cumulative Impacts**

There would be no cumulative impacts under either alternative.

**C. Consultation** No consultations were conducted with any person, group or agency.

**D. Maps** Special Management Areas – Bishop Resource Management Record of Decisions (Figure 2)

**E. References**

Bishop Resource Management Plan Record of Decision, April 1993.

## **CULTURAL RESOURCES**

### **A. Affected Environment**

Located on the western fringe of the Great Basin physiographic province the Owens Valley region, incorporated within the Bishop Field Area, contains the highest archaeological site densities within the Great Basin (Basgall and McGuire 1988; Bettinger 1975, 1982). In 1981 and 1982 the BLM completed two Environmental Impact Statements (EIS) addressing grazing on public lands within the Bishop Field Area; "Proposed Livestock Grazing Management for the Benton-Owens Valley Planning Unit," 1981 and "Proposed Livestock Grazing Management for the Bodie-Coleville Planning Units," 1982. In both EIS's cultural resource reviews are limited to Class I literature searches of existing data. The general conclusion was:

Livestock use impacts on cultural resources include: displacement (vertical and horizontal) and breakage of artifacts, and the mixing of depositional associations through trampling; destruction or enhanced deterioration of structures and features through rubbing; and an acceleration of natural erosional processes. Plants valued by Native American traditionalists could be trampled or consumed by livestock, adversely affecting plant availability at some locations. For purposes of analysis it is assumed that the impacts of livestock use are distributed in proportion to the actual distribution of livestock, with the most intensive impacts occurring at livestock use concentration areas. Cultural Resources located on lands having erosional or other types of watershed deterioration problems attributed to livestock use impacts are assumed to receive high impacts. Cultural resources are non-renewable, and impacts of livestock use on cultural resources are cumulative (Bodie-Coleville EIS 1982:4-92).

Using existing survey data (BLM 1978; Busby et al. 1979; Hall 1980; Kobori et al. 1980), site densities were predicted to range from 9 sites per square mile ( $m^2$ ) in the Benton Planning Unit to 4 sites  $m^2$  in the Owens Valley Planning Unit, with an average of 9.54 sites/ $m^2$  in the Bodie/Coleville Planning units.

### **Previous Research on Grazing Impacts to Cultural Resources**

Relatively few studies have been undertaken to address the impacts of domestic livestock grazing to archaeological resources (Archaeological Sites Protection and Preservation Notebook: Technical Notes (ASPPN) I-15, 1990; Osborn et al. 1987; Roney 1977; Thomas D. Burke, personal communication 1998), with more emphasis being placed on the effects of human trampling in site formation processes (see Nielson 1991). Nonetheless, the same conclusions have been drawn from these studies as summed by Nielson (1991).

Intensive trampling modifies the horizontal distribution of artifacts, it obscures patterns existing in their original deposition, and eventually introduces new trends

in their spatial arrangement. By producing vertical migration of materials it also can move artifacts across stratigraphic units, and mix in the same deposits items originating in different occupations. When trodden, artifacts undergo several types of damage, like breakage, micro-chipping and abrasion. The resulting traces sometimes mimic the damage produced by use or by other post-depositional processes and therefore can lead unwittingly to erroneous functional interpretations (Nielson 1991:483-484).

Variables influencing the level of impact at any given site include: 1) soil type (e.g., hard or rocky soil substrates will lead to greater artifact damage and horizontal displacement); 2) soil moisture (e.g., wet soils will lead to greater vertical displacement and stratigraphic mixing); 3) vegetation type/ground cover (depending on site landform specifics, erosion may increase as vegetation cover decreases resulting in significant secondary impacts); and 4) intensity of grazing.

The studies reviewed here are experimental tests of trampling impacts (Archaeological Sites Protection and Preservation Notebook: Technical Notes (ASPPN) I-15, 1990; Nielson 1991; Osborn et al. 1987; Roney 1977). All of the studies found that smaller artifacts (< 2 g [ASPPN 1991]) tend to migrate vertically more readily than larger artifacts thus biasing site interpretation in cases where no subsurface analyses are involved. In a controlled experiment within a portable corral, Roney (1977) found that after 40 hours, in which 78 cows were rotated through the corral, that only (5%) of 60 flaked stone artifacts could be found on the surface. The hard soil substrate was churned to a fine dust to 5 cm, 81% of the artifacts were horizontally displaced up to .75 m and 48% were damaged and broken. Roney (1977) concluded that "...cattle do produce significant physical damage to lithic artifacts."

Nielson (1991), in his assessment of human trampling, found the same trends with top soil loosening occurring to 1-2 cm on a hard soil substrate with subsoils being compacted. Again smaller items tended to migrate downward, but were less apt to move horizontally than large specimens. Sixty percent of the lithic debitage showed damage ranging from abrasion, microflaking, and breakage. As would be expected, ceramics showed the greatest level of impact with a random distribution of sizes being reduced to a skewed, unimodal distribution dominated by smaller size classes less than 30 cm in diameter. We can predict that cattle impacts would be highly magnified over Nielson's (1991) results from his studies on human trampling, but would follow the same trends.

In field visits Tom Burke (personal communication 1998), owner and principal investigator of Archaeological Research Services, Inc., has found cattle grazing to have "substantial adverse effect to archaeological site integrity." In heavy use areas mixing can occur up to 10-20 cm in most conditions and up to 30-40 cm in wet conditions. The author's field investigations corroborate Burke's assessments. As would be expected, Burke has found impacts to be highest in areas where cattle tend to congregate such as springs, water courses, troughs, shade zones, and salt licks. The zone of impact around such features extends from 25-100 meters, with a linear pattern of roughly 25 to 50 meters following stream courses. Field assessments in the Bishop

Field Area support these observations.

In summary, it can be concluded that livestock grazing can have adverse effects to archaeological resources causing artifact damage, movement, and mixing. In the case of standing structures, cattle rubbing or scratching can cause severe impacts causing structure degradation and collapse (Chuck Fell, Bodie State Historical Park, personal communication 1995). Intensity of grazing, soil hardness, moisture, vegetation cover, and type are factors influencing the level and types of impacts. Erosion is a secondary impact resulting from grazing that can also have negative effects to cultural sites. The areas of greatest concern are those locations where cattle congregate and tend to spend a large percentage of their time. In zones where cattle are more dispersed, such as upland locations, it can be predicted that impacts will be mainly surficial, causing no stratigraphic mixing, but perhaps resulting in horizontal displacement of artifacts. In rocky areas and zones without sufficient feed very little to no cattle impact is expected to occur (field observations 1999).

## **B. Environmental Consequences**

### **1. Impacts of Proposed Action**

Cattle use on the subject allotments is generally highly dispersed. Due to the fact that only one known site occurs within areas of heavy congregation, and mitigation has been completed to curtail further negative effects to the site, impacts to cultural properties are predicted to be minimal as a result of the proposed action.

### **2. Impacts of No Grazing**

This alternative would eliminate all threats of damage to cultural properties that could result from the proposed action.

### **3. Cumulative Impacts**

Cultural resources would be cumulatively affected from a variety of actions including livestock grazing. Continued trailing through a site may cause horizontal movement of artifacts, including artifact damage and wear. These types of impacts will be, generally, highly localized and would not adversely affect those properties of a given site which may make it eligible for listing on the National Register of Historic Places. Areas of continual cattle congregation and those where wallowing is prevalent can result in significant cumulative impacts to a cultural property, causing both horizontal and vertical mixing of deposits, artifact damage, and negative impacts to features such as living floors, hearths, and house structures. Field evaluations have identified high-use, congregation areas on the allotments and only in one case was a site found to occur on the West Crater Mountain allotment. Appropriate mitigation measures have been completed to curtail any further impact of the site.

### **C. Consultation**

Thomas D. Burke, personal communication 1998, concerning grazing impacts to archaeological resources.

Chuck Fell, Bodie State Historical Park, personal communication 1995, concerning impacts to historic buildings and resources.

**D. Maps** None, due to the proprietary nature of the cultural resource information.

### **E. References**

ASPPN. 1990. Impacts Of Domestic Livestock Grazing On Archaeological Resources  
Archaeological Sites Protection and Preservation Notebook, Technical Notes I-15. U.S.  
Army Engineer Waterways Experiment Station, Vicksburg MS.

Basgall, Mark E., and Kelly R. McGuire. 1988. The Archaeology of CA-INY-30, Prehistoric  
Culture Change in the Southern Owens Valley, California. On File California Department  
of Transportation, Bishop.

Bettinger, Robert L. 1975. The Surface Archaeology of Owens Valley, Eastern California:  
Prehistoric Man-Land Relationships in the Great Basin. Ph.D. Dissertation, University of  
California, Riverside.

1982. Archaeology East of the Range of Light: *Monographs in California and Great  
Basin Anthropology* 1.

Bureau of Land Management. 1978. California Desert Program: Archaeological Sample Unit  
Records For Owens Valley Planning Unit. Unpublished report on file at the Eastern  
Information Center, Riverside, California

Busby, Colin I., John M. Findlay and James C. Bard. 1979. A Cultural Resource Overview of  
the Bureau of Land Management Coleville, Bodie, Benton and Owens Valley Planning  
Units, California. *Bureau of Land Management Cultural Resources. Publications,  
Anthropology-History*. Bakersfield District, California.

Halford, F. Kirk. 1999. A Research Design for the Bishop Field Office Grazing Allotment  
Assessments. Cultural Resource Project : CA-170-99-04. On file in the BLM, Bishop  
Field Office, Bishop, California.

Hall, M.C. 1980. Surface Archaeology of the Bodie Hills Geothermal Area, Mono County,  
California. United States Department of the Interior, Bureau of Land Management,  
Bakersfield District.

Kobori, Larry S., Colin I. Busby, James C. Bard, and John M. Findlay. 1980. A Class II Cultural Resources Inventory Of The Bureau Of Land Management's Bodie And Colville Planning Units, California. Basin Research Associates, Inc. for the U.S. Department of Interior, Bureau of Land Management, Bakersfield District Office.

Nielson, Axel E. 1991. Trampling The Archaeological Record: An Experimental Study. *American Antiquity* 56(3):483-503

Osborn, A., S. Vetter, R. Hartley, L. Walsh, and J. Brown. 1987. Impacts of Domestic Livestock Grazing on the Archeological Resources of Capital Reef National Park, Utah. *National Park Service Midwest Archeological Center, Occasional Studies in Anthropology*, No 20. Lincoln, NE.

Roney, John. 1977. Livestock And Lithics: The Effects Of Trampling. On file at the Department of Interior, Bureau of Land Management, Winnemucca District Office. Winnemucca, NV.

## **ENVIRONMENTAL JUSTICE**

### **A. Affected Environment**

There are no low-income or minority populations living on any of the allotments.

There are seven Native American communities in the Eastern Sierra, which are near allotments. Members of these communities do some hunting and subsistence collecting of materials from public lands on various allotments – pinyon nuts, basket weaving materials, medicinal plants, etc.

There may be some low-income Hispanic or other ethnic minorities working on various allotments, working for some of the cattle and sheep operations. Depending upon actual decisions made, there may be some impacts to certain individuals.

### **B. Environmental Consequences**

#### **1. Impacts of Proposed Action**

Continued livestock grazing would have no affect upon any low-income or minority populations. If any changes in grazing operations are required, there may be a loss of a job to a member of a low-income or minority population. There may also be new jobs created. Any such impacts would be limited to a single job here or there and there would not be a disproportionate impact, either negative or positive, to such a group.



## 2. No Grazing

If there were no grazing allowed on public land, there may be a loss of some jobs to members of a low-income or minority population. Any such impacts would be limited to a single job here or there and would not be a disproportionate impact to such a group.

There might be a slight positive impact to some groups through increased availability of some resources that are collected on public lands. This would however vary by area and type of resource, and would probably be minimal.

## 3. Cumulative Impacts

Cumulative impacts to low income or minority populations from past, present, and reasonably foreseeable public or private actions including any actions on non federal lands would be extremely low and would not be disproportionate to impacts on other segments of the population under any of the alternatives. A “no grazing” scenario would potentially have the most negative impact, but again, would not be disproportionate to the low income or minority population.

## **C. Consultation**

There are seven Native American communities in the Eastern Sierra, which are near allotments.

When we began the allotment assessment process in 1999, these communities were all contacted by letter (January 11, 1999), with a follow-up phone call, to determine if there were any Native American concerns with the grazing program and if they would like to participate in the allotment assessment process. The communities either said that there were no impacts or decided not to comment / participate. None indicated a desire or need to participate in the assessment process. (Consultation log available for FY99)

Each of the tribal offices was contacted again by phone on 11/30/00 and the letter of January 1999 was sent to them again (fax). Several phone calls were made to each Tribe to follow up after they received the letter. Again, they stated that there are no impacts to their communities by the grazing program that could be construed as disproportionate impacts under the Environmental Justice criteria. (Consultation log available for FY2001)

A couple of the communities expressed some specific concerns that are addressed in the Native American Consultation section of the document.

## INVASIVE, NON-NATIVE SPECIES

### A. Affected Environment

Allotment	Invasive Species	Estimated % Cover
West Crater Mountain	<i>Bromus tectorum</i> (cheat grass)	15
Tinemaha	<i>Bromus madritensis</i> ssp. <i>rubens</i> (red brome)	5
West Santa Rita	<i>Bromus madritensis</i> ssp. <i>rubens</i> (red brome)	5

Although the density of invasive, non-native plant species appears to be low on the Tinemah and West Santa Rita allotments it should be noted that during our annual Rangeland Health Assessments in 1999 these weed densities were found to exceed the cover of the native perennial bunch grass component. Higher weed densities are associated with the West Crater Allotment due to the volcanic substrates that comprise the area. Previous studies in the region by Woodward and Ustin (1988) demonstrated the relationship between higher weed densities and volcanic soils that are higher in phosphorus, potassium, calcium and magnesium. The West Crater Allotment is at highest risk of weeds affecting overall ecological function including reductions in native species composition, increased fire frequency, and reductions in mycorrhizal densities (Bethlenfalvay and Dakesian 1984). Management tools to deal with these invasions is limited due to the rocky, steep terrain, but some use of early-season grazing may be used as a management prescription as long as judicious livestock herding is employed, e.g. livestock should not stray into uninfested areas and should only lightly use an area. Any grazing should occur well before seed set to limit continued spread of weed seed. Some application of pre-emergent herbicide may also be necessary if periodic monitoring (1-3 years) detects an increase in weed proliferation in critical mule deer areas.

### B. Environmental Consequences

#### 1. Impacts of Proposed Action

Provisions for grazing before seed set of these species has been included in allotment grazing stipulations. Early season grazing, normally before seed set, of these annual grasses may help reduce the spread of these invasives (Olson 1999) by reducing inputs into the seed bank of particular sites. Other potential long-term impacts of the proposed action if weed densities increase include a reduction in native plant cover and vigor (below and above ground production), increased erosion leading to increased germination of invasive weed seed (Evans and Young 1972), and a reduction in mycorrhizal populations.

## 2. No Grazing

No grazing before seed set of these invasive species could increase the seedbank inputs into particular sites over time and potentially increase the density of some of these invasive, non-native species. However, no grazing would also reduce the chances that residual weed seed from sites is spread to new areas and would minimize the likelihood that the other long-term impacts discussed above would occur.

## 3. Cumulative Impacts

Cumulative impacts under the Proposed Action and No Grazing alternatives would include Off-highway vehicle (OHV) use that would exacerbate the spread of invasive weeds. However no unregulated OHV use was identified during the allotment assessments.

## **C. Consultation**

Coordination with the California Native Plant Society, Bristlecone Chapter

## **D. References**

- Evans, R.D. and J.A. Young. 1972. Microsite requirements for establishment of annual rangeland weeds. *Weed Science*. 18:154-161
- Bethlenfalvay, G.J., and S. Dakessian. 1984. Grazing effects on mycorrhizal colonization and floristic composition of vegetation on a semiarid range in northern Nevada. *Journal of Range Management* 37: 312-316
- Olson , B.E. 1999. Grazing and weeds. Pages 85-97 in R.L. Sheley and J.K. Petroff, editors. *Biology and management of noxious rangeland weeds*. Oregon State University Press, Corvallis, Oregon.
- Woodward, R.A, Ustin, S.L. 1988. Differences in successional vegetation of a sagebrush community following wildfire on two diverse substrates. IN: *Plant Biology of Eastern California*. University of California White Mountain Research Station. Los Angeles, CA

## **NATIVE AMERICAN CONCERNS**

### **A. Affected Environment**

There are seven Native American communities in the Eastern Sierra. All of the communities are

near, and in some cases even surrounded by, one or more allotments. None of the communities are living on an allotment. There are no treaty rights (hunting, fishing, etc.) associated with any of the communities or any of the allotments.

Some members of these communities hunt and some do some subsistence collecting of materials from public lands – pinyon nuts, basket weaving materials, medicinal plants, fire wood, etc. However, this is general use and there were no specific “traditional use areas” identified by any of the Tribes on any of the allotments. Any other traditional uses or use areas have not been divulged to this office.

Some general concerns mentioned by the Tribes are:

- They have general concerns with overgrazing and want us to control overgrazing to protect the ecosystem and ensure that it is functioning properly
- They have concerns that water (or other) developments not impact cultural sites and that they not affect deer habitat (through de-watering streams / springs, or trampling of habitat around new troughs, etc.)
- They do not want cattle grazing on top of individual burials or grave sites or within known Native American cemeteries
- They do not want sheep bedding on top of cultural sites
- They do not want BLM to use herbicides on plants that they might collect
- They do not want BLM to cut / remove pinyon

All project development proposals are examined for potential impacts prior to approval. This includes potential impacts to water sources, streams, wildlife habitat and cultural resources. This practice will continue under all alternatives.

Herbicides are used very sparingly and only in certain very restricted circumstances. Any potential application is examined for potential impacts prior to approval. This includes potential impacts to water sources, streams, wildlife habitat and cultural / traditional uses. This practice will continue under all alternatives.

There are no Pinyon in these allotments.

## **B. Environmental Consequences**

### **1. Impacts of Proposed Action**

The Assessment showed that there is no overgrazing in these allotments, that they are in proper functioning condition. The intent is to keep the ecosystem functioning properly.

A cultural inventory and assessment is being done as part of the allotment assessment process. This cultural inventory and assessment will identify any current problems (water projects, fences,

livestock bedding areas) causing impacts to cultural sites, including burials, so that they may be corrected.

## 2. No Grazing

Removing grazing would generally result in fewer impacts to the natural environment, thus alleviating the Native American concerns with overgrazing, water project development, grazing impacts to cultural resources/burial sites, etc.

## 3. Cumulative Impacts

The cumulative impacts of doing the allotment assessments and of issuing grazing permits within the requirements of the standards and guidelines will result in the long term protection and improvement of the ecosystems found within the jurisdiction of the Bishop Field Office – better habitats for plants and animals, protection of cultural sites, etc. These improvements, coupled with continued coordination and consultation with the Tribes, should result in BLM addressing the Tribes' concerns in a manner agreeable to the Tribes.

## **C. Consultation**

All seven Native American communities – Bridgeport, Mono Lake, Benton, Bishop, Big Pine, Ft. Independence, and Lone Pine – were contacted in January 1999 by letter, with a follow-up phone call, to determine if there were any Native American concerns with the grazing program and if they would like to participate in the allotment assessment process. The communities either said that there were no impacts or decided not to comment / participate. (Consultation log available for FY99)

Each of the tribal offices was contacted by phone on 11/30/00 and the letter of January 1999 was sent to them again (fax). Several phone calls were made to each Tribe to follow up after they received the letter. Various individuals stated some general concerns which are addressed above; but again, they stated that there are no direct specific impacts to their communities or to their community members by the grazing program. (Consultation log available for FY2001)

# **SOCIAL AND ECONOMIC VALUES**

## **A. Affected Environment**

Regionally livestock operations involve use of BLM, Forest Service (USFS), or City of Los Angeles Department of Water & Power lands (LADWP). There are 3 permittees associated with the three allotments. Murton Stewart has permitted use for the West Crater Mountain allotment at 331 AUMs. Joe Mendiburu has a permit for the Tinemaha allotment (221 AUMs). Finally, Lacey Livestock has permitted use for the West Santa Rita allotment at 8 AUMs. There is a

careful balance of head numbers and seasons of use for grazing these allotments, such that any substantial change of use would negatively affect their overall operation. Having other permits or lease land available does not in itself lead to increased flexibility.

The local economy is benefited by these grazing operations from monies spent to establish and maintain a ranching operation and contributions to the labor force. This is true of any privately owned business. Inyo and Mono County totaled \$ 35,635,020 in agriculture production for 2000 which was an 8% increase from 1999. Inyo County agriculture ranks third, behind recreation/tourism and government agency operations, as an economic production sector. Of a 100% total in agricultural values, livestock production accounted for 51% in year 2000. This amounted to \$ 7,438,970 or 51% of the total \$ 14,481,970 agricultural production.

## **B. Environmental Consequences**

### **1. Impacts of Proposed Action**

The local economy is benefited by these grazing operations from monies spent to establish and maintain a ranching operation and contributions to the labor force. This is true of any privately owned business. Sustaining these operations, from continued use of BLM allotments, would have a positive economic affect on the stability of their overall livestock operation. The social value of retaining a rural, agricultural lifestyle would be preserved and would be in keeping with the public's perception of the Owens Valley's western culture. The proposed action will not impact the social and economic stability of these ranching operations.

### **2. No Grazing Alternative**

If grazing were terminated on these BLM allotments, there would be slight to moderate impacts to the three operators. The grazing capacity of their LADWP leases may not accommodate the increased use or meet LADWP's management requirements of those lands. The permittees may be forced to operate with fewer cattle. There would be unauthorized grazing use onto BLM lands, since their LADWP lease lands are unfenced. It would not be cost effective for LADWP to construct fences to contain cattle. The BLM may experience criticism resulting from this decision from its local constituency.

### **3. Cumulative Impacts**

There will be no cumulative impacts from the proposed action.

## **C. Consultation**

George Milovich, Agricultural Commissioner Inyo-Mono Counties (personal communication).

## **D. Maps**

None

## **E. References**

1999 Annual Crop and Livestock Report, Inyo- Mono Counties (prepared June 1, 2000)

# **SOILS**

## **A. Affected Environment**

The soil classification of the allotments has been mapped in detail by the Natural Resource Conservation Service (NRCS). Three main soil associations exist among the three allotments, which are soils of Lava Flows, soils of the Mountainous Regions, and soils of the Stony Alluvial Fans. The Allotment that contains soil of Lava Flows is West Crater Mountain. Soils of Lava Flows are cinder loamy sands and sandy loams on basaltic lava flows and cinder cones. These soils are very deep and well to somewhat excessively drained. Available water capacity is low and the hazard of water erosion is moderate. Wind erosion hazard is slight. Allotments that contain soil of Mountainous Regions include Tinemaha and West Santa Rita. Soils of the Mountainous Regions are primarily sandy loam, which are generally shallow to deep and well drained. Available water capacity is low to moderate. The hazard of erosion is slight to moderate for water and moderate to severe for wind. Because of the rapid intake and deep percolation of moisture, loss from runoff is negligible. This permits deep rooted plants to grow vigorously under arid conditions. These soils are highly susceptible to wind erosion if vegetation cover is removed. The Tinemaha allotment contains soils of Stony Alluvial Fans. Soils of the Stony Alluvial Fans are primarily gravelly loam, which are generally very deep and well drained. Alluvial fans are comprised of either shadscale gravelly loam or gravelly loams. These soils are mostly shallow, well drained, with gravelly to cobbly surfaces and subsurface textures. These soils tend to limit the establishment of seeds and seedling development. Valley floor soils may also have inclusions of calcareous loam along remnant river terraces that exhibit duripans that inhibit water infiltration and restrict shrub rooting depths.

Erosion potential of these soils range from slight to moderate on the valley floor. This may be due to wind erosion and can be somewhat attributable to the effects of cattle grazing and hoof action which disturbs the soil surface. The erosion potential on the alluvial fans is low due to the gravelly surface texture and low occurrence of cattle use compared with the valley floor. There are no identified erosion problems on the allotments.

BLM assessed these allotments in 1999 to determine if the rangeland health standards were being met. Specific soils standards relate to permeability and infiltration. All sites examined were found to meet the standards for soils.

## **B. Environmental Consequences**

### **1. Impacts of Proposed Action**

The proposed action will create no new impacts.

### **2. No Grazing**

The proposed action will create no new impacts.

### **3. Cumulative Impacts**

There will be no cumulative impacts from the proposed action.

## **C. Consultation**

Reference to Benton Owens Valley Soil Survey as updated by NRCS.

## **D. Maps**

None

## **E. References**

Bishop Resource Management Plan and Environmental Impact Statement. August 1991.  
Benton-Owens Valley Planning Unit, Draft Environmental Impact Statement

## **WATER QUALITY, SURFACE, AND GROUND WATER**

### **A. Affected Environment**

Perennial surface water occurs in 2 of the 3 allotments in the form of streams (West Crater Mountain allotment) and a spring (Tinemaha allotment). A poorly producing natural spring is located just south of the south boundary of the West Santa Rita allotment. This spring is highly variable in its discharge and typically does not produce enough water for regular use by anything other than small mammals and insects.

Big Pine Creek and Birch Creek are the north and south boundaries, respectively, of the West Crater Mountain allotment. Water quality for these streams was sampled for a limited number of constituents in 1978 during the resource inventory for this field office. Water quality criteria established for aquatic life and secondary drinking water standards were met in both streams for



dissolved oxygen, pH, CO<sub>2</sub> and total dissolved solids. The standard for turbidity for aquatic life was very slightly elevated in Birch Creek and exceeded the standard by a magnitude of 4 X in Big Pine Creek. Turbidity is likely due to the locally large areas of vertical banks with little vegetative cover where sand is constantly entering the stream. The standard minimum concentration for alkalinity (measured as CaCO<sub>3</sub>) was below the 100mg/L level for aquatic life in both streams. This is likely not a problem since alkalinity serves to buffer the effects of sudden changes in pH which might cause death to fish or other aquatic life. Magnitude changes in pH are not likely for eastern Sierra streams.

Water quality for these streams is also described by the presence of aquatic invertebrate insect species (in a larval stage of life form). Presence of some types of insects is correlated with good water quality. Species within the Ephemeroptera, Plecoptera and Trichoptera orders are generally representative of this condition. Sampling at a single location on Birch Creek found 6 insect species within 2 of the orders, while 10 species distributed among all orders were recorded from Big Pine Creek. The high level of species diversity in one time sampling indicates a robust (good water quality) environment for aquatic species.

Mule Spring in the Tinemaha allotment is the only natural spring located in this group of allotments. Mule Spring is dependable in its discharge of approximately 17 gpm. Water quality of Mule Spring has been defined by electrical conductivity (= 800 umhos), pH (= 7.3) and temperature (= 22°C or 72°F, average). Water quality is further defined by the presence of a gastropod (*Pyrgulopsis owensensis*) that is intolerant of poor aquatic environments.

## **B. Environmental Consequences**

### **1. Impacts of Proposed Action**

Water quality should be maintained, at a minimum, with implementation and monitoring of the proposed terms and conditions.

### **2. No Grazing**

Water quality would be maintained, at a minimum, with implementation of a no grazing option.

### **3. Cumulative Impact**

Big Pine Creek is heavily used for recreation purposes throughout its entirety. Human traffic along the banks is having a small but consistent influence on the quality of stream banks and resultant input of sediment to the stream. A Los Angeles Department of Water and Power hydroelectric generation plant is located approximately 0.5 miles upstream from the upper BLM boundary. The hydraulic character of the channel will continue to be affected from this development with affects on riparian vegetation and water quality. Big Pine Creek's unstable bank soils and varied, seasonal flows have a large influence on the channel's stability. With

locally large areas of vertical banks and sand constantly entering the stream, water quality constituents, particularly turbidity, will continue to be elevated.

### **C. Consultation**

None

### **D. Maps**

None

### **E. References**

Bishop Field Office Stream Inventory Files, 1978  
Bishop Field Office Spring Inventory Files, 1985

## **WETLANDS/RIPARIAN ZONES (CRITICAL ELEMENT)**

### **A. Affected Environment**

#### **Streams and Springs**

Riparian vegetation along Big Pine Creek is primarily composed of Jeffrey pine (*Pinus jeffreyi*), willow (*Salix sp.*), wild rose (*Rosa woodsii*) and buckthorn (*Rhamnus sp.*). Riparian vegetation on Birch Creek is primarily water birch (*Betula occidentalis*), cottonwood (*Populus sp.*), willow (*Salix sp.*) and wild rose (*Rosa woodsii*). Of the 2 streams, riparian conditions along Birch Creek (approximately 3.3 miles of public land) are substantially more robust and capable of withstanding natural flooding without losing channel integrity and bank stabilizing vegetation. Birch Creek is deeply incised into the surrounding alluvial fan along with having a very dense cover of larger, woody riparian vegetation along the banks and for those reasons has remained generally immune to the effects of livestock grazing or recreational interest from fishing and other similar pursuits. Birch Creek was analyzed under the protocol for assessing Proper Functioning Condition (BLM, 1993) and determined to be one of the few perennial streams within the field office area to rate a grade of “proper functioning condition”.

Big Pine Creek (approximately 0.5 miles of public land) is less able to withstand natural and anthropogenic influences to its channel integrity and riparian vegetation. The primary reasons for this were covered, above, in the Water Quality section.

Mule Spring riparian vegetation is located on a somewhat steep slope and is in a continually evolving improvement in vegetation quality and overall biomass. Due to construction of a pond (see Wildlife section) and a redirection of pond outflow along a natural drainage pattern, the

riparian vegetation in this area has substantially improved in its attractiveness to all manner of wildlife species and in its structural complexity since 1990. A 2 track dirt/gravel road bisects the lower ¼ of the riparian zone. This accounts for a minor loss of riparian vegetation but does not compromise the functioning of the riparian community.

## **B. Environmental Consequences**

### **1. Impacts of Proposed Action**

#### **Streams and Springs**

Implementation of the permit terms and conditions should ensure the maintenance of current conditions on both streams and Mule Spring. Big Pine Creek historically has received very light use by cattle; only for use as a water source. Birch Creek has typically not been impacted by cattle due to the heavy “armoring” of the banks by vegetation and the high steep slopes bordering the channel. Mule Spring is physically located in an unattractive area for cattle use.

### **2. No Grazing**

The riparian condition of both streams and Mule Spring would likely be unchanged from their current status due to little or no livestock use occurring in those areas.

### **3. Cumulative Impacts**

The proposed action should not contribute to any cumulative impact on riparian conditions. Historic gravel mining directly on the Mule Spring site caused extensive alteration and loss of the natural quality and biomass of riparian vegetation. The recovery of the riparian vegetation in this area will never mimic the pre-disturbance conditions. Due to the extensive topographic alteration of the site, riparian conditions may eventually achieve a level of quality and biomass commensurate with the area’s potential. There is no way to predict the temporal and spatial limits of this process.

## **C. Consultation**

No consultations were conducted with any person, group or agency.

## **D. Maps**

None

## **E. References**

Bishop Field Office, 1978 Stream Inventory, files.

Bishop Field Office, 1986 Water Supply Inventory, files.

Bishop Field Office, 1993 Assessment of Functional Condition on Streams, files.

## WILDLIFE

### A. Affected Environment

#### Uplands

Plant communities comprising the upland (non-riparian) habitats within the grazing allotments are identified as mixed desert shrub and sagebrush in the West Crater Mountain allotment, shadscale scrub/saltbush scrub in the Tinemaha allotment and primarily shadscale scrub in the West Santa Rita allotment. A 1978 wildlife inventory that employed a stratified random sampling scheme within some of these vegetation communities documented common small mammals, reptiles, and passerine songbirds that would typically be found in these habitat types.

Within the mixed desert shrub habitat 6 species of small mammals distributed within the kangaroo rats (*Dipodomys sp.*), pocket mice (*Perognathus sp.*), deer mice (*Peromyscus sp.*) and wood rat (*Neotoma sp.*) were documented. In the shadscale scrub habitat 1 species of kangaroo rat and 2 species of deer mice were recorded, as expected in this less complex habitat.

At least 8 species of Iguanid lizards, like the leopard (*Gambelia wislizenii*) and sagebrush (*Sceloporous graciosus*) lizards and 1 species of Teiid (*Cnemidophorus tigris*) lizard are potentially found within all of the habitat types along with some non-venomous and venomous snakes: gopher snake (*Pituophis melanoleucus*), common king snake (*Lampropeltis getulus*), speckled rattlesnake (*Crotalus mitchellii*) and sidewinder (*C. cerastes*), respectively.

Birds likely to be observed in different seasons in one or more of these habitats include black-throated sparrow (*Amphispiza bilineata*), Brewer's sparrow (*Spizella breweri*), sage sparrow (*A. belli*), rock wren (*Salpinctes obsoletus*), blue-gray gnatcatcher (*Polioptila caerulea*), rufous-sided towhee (*Pipilo erythrophthalmus*), Say's phoebe (*Sayornis saya*), Bewick's wren (*Thryomanes bewickii*), and house finch (*Carpodacus mexicanus*). The three sparrows are species of interest because they are considered sagebrush obligates (this habitat type is found only in the northern ½ of the W. Crater Mountain allotment) and may be declining range-wide as a result of loss of sagebrush habitat, although in this area they are known to breed in other desert shrub communities. Upland game birds like chukar (*Alectoris chukar*, a non-native species), California quail (*Callipepla californica*), and mourning dove (*Zenaida macroura*) are seasonally present in the vicinity of water sources.

The area is used by winter resident raptors including Cooper's hawk (*Accipiter cooperii*) and sharp shinned hawk (*A. striatus*), and breeding species including prairie falcon (*Falco mexicanus*), barn owl (*Tyto alba*), and great horned owl (*Bubo virginianus*).

Large ungulate species like mule deer (*Odocoileus hemionus*) and the Tule elk (*Cervus nannodes*) intermittently use portions of the West Crater Mountain and Tinemaha allotments. The preponderance of time mule deer use the W. Crater Mountain allotment is during winter. Spring green-up may attract deer to use the mixed sagebrush/bitterbrush community in the western portion of the allotment. This allotment likely has little other attractive attributes for deer during other seasons. Mule Spring in the Tinemaha allotment is a regularly used water source by mule deer during the drier summer and fall months. The northern periphery of the Tinemaha lava flow may attract mule deer during the spring production of forbs and perennial shrubs. There are few habitat attributes within the allotment that are attractive to mule deer.

Tule elk use of the W. Crater Mountain allotment generally occurs through the late summer, winter and possibly in to spring. This may be influenced by greater use, over the past 12 to 15 years, of the alfalfa field west of Highway 395 near Fish Springs which has caused the majority of elk to shift their use from areas east of the highway. The southern portion of the W. Crater Mountain allotment may attract a few cows during the calving period (April and May). Calving, west of the highway, is centered west of Red Mountain in the Sierra foothills and the Poverty Hills. Both areas are immediately peripheral to the W. Crater Mountain allotment. Occasionally elk will use Mule Spring as a water source. However, most of the elk activity in the Tinemaha allotment is in the lava flow east of the reservoir. Elk calve in the lava flow and canyons to the east of the reservoir (in April and May). The protection from predators and adverse weather that this area offers along with new growth of annual forage generally defines the habitat attributes elk seek in selection of calving areas. The Tinemaha/Fish Springs group of elk number approximately 125 animals of both sexes and age classes as of 2002. Ninety-four (94) adult cows were counted in 2002 among this group.

### Riparian

The stream and spring environments (see Wetland/Riparian section above) provide highly productive habitat, of lesser acreage, for many of the species mentioned under the Upland areas. In addition, some songbird species are dependent on riparian vegetation communities for breeding, foraging or during migration. As an example, using the 1978 breeding bird survey information from the Bairs Creek riparian transect, songbirds associated with the west side Owens Valley streams include, but are not limited to, western wood pewee (*Contopus sordidulus*), black-headed grosbeak (*Pheucticus melanocephalus*), Lazuli bunting (*Passerina amoena*), Costa's hummingbird (*Calypte costae*), black-chinned hummingbird (*Archilochus alexandri*), bushtit (*Psaltiriparus minimus*) and warbling vireo (*Vireo gilvus*). Due to the near absence of riparian sites on the east side of the Owens Valley, these and other riparian associated species are mostly absent.

Riparian habitat is scarce in the Owens Valley and of particular value to songbirds. Songbird use of Owens Valley alluvial fan riparian sites were studied intensively from 1998-2000. Birch Creek in the W. Crater Mountain allotment was part of this study. Breeding bird diversity,

species richness and numbers of individuals were lower than on sites at higher elevations or with broader riparian areas, but these sites did offer a variety of valuable riparian habitats as evidenced by the presence of several California Partners in Flight focal species, and dense nesting populations of three species of hummingbird. Egg laying began in late March and continued into July. Nest success was high or above average for most species, with exceptions including spotted towhee although this was the most abundant species. Predation was by far the most common reason for nest failure. Parasitism by brown-headed cowbirds was low, possibly reflecting remoteness from their foraging areas. These alluvial fan riparian habitats were found to be especially important to songbirds during spring and fall migration, and were also much used during the breeding season by some species such as sage and black-throated sparrows which nest in the upland nearby. An influx of predominantly higher-elevation nesting birds during heavy snow pack years and of juvenile birds of species nesting at lower elevations demonstrates the use of these areas as dispersal corridors or spillover habitat for other adjacent habitats (Heath et al. 2001).

The importance of riparian habitat extends beyond the presence of songbirds. Stream shading, bank and channel stability, water quality, floodplain stability, habitat complexity, primary and secondary productivity, high plant and animal species diversity are a few of the attributes that riparian vegetation communities provide. Attributes relating to the physical conditions of riparian communities are responsible for their resilience against natural or man induced negative impacts, as long as the hydrologic conditions are not eliminated or severely curtailed. Riparian communities within the allotments are stable in the sense of a dependable annual hydrologic cycle, thus providing spatial and temporal continuity for a high diversity of plant and animal species over the larger landscape.

#### Threatened or Endangered Species:

No federally listed threatened or endangered species are known to occupy habitat within these allotments.

### **B. Environmental Consequences**

#### 1. Impacts of Proposed Action

The vegetation quality (vigor) in the upland areas of the allotments should be improved from their current conditions with implementation of the proposed terms and conditions. Species guilds like rodents and songbirds should reap the most immediate benefit from improvement in the availability of food resources and cover. It is unlikely that any noticeable improvements will be witnessed in the riparian habitats. Landform conditions (e.g. the deeply incised character of the Birch Creek channel) along with the natural “armoring” of stream banks by large boulders/cobble and dense riparian vegetation have been unattractive to prolonged or persistent livestock grazing in riparian environments.

## 2. No Grazing

Overall, wildlife habitat conditions would be improved, particularly in the immediate effects for species guilds like rodents and songbirds. As an example, granivorous rodents would benefit, over time, by an increased biomass of seed producing plant species. A typical consequence would be a somewhat increased rodent population benefiting predatory species groups like canids and raptors. For the reasons stated above, there would be little benefit to the stream and Mule Spring riparian areas.

## 3. Cumulative Impacts

Historic impacts to the upland and riparian vegetation communities from road building (Big Pine Creek), construction of a water management facility on Big Pine Creek by LADWP and its affect downstream, historic mining activity at Mule Spring that completely altered the natural environment, other mining activity around Crater Mountain with associated roads and wildfires (western area of W. Crater Mountain allotment) have either caused permanent changes in stream and spring function or temporary change to vegetation seral conditions.

Improved condition in the upland areas with native bunch grasses should provide an increased forage base for rodents and passerine birds, primarily on the W. Crater Mountain allotment. Upturn in the populations of these guilds should cause predators, in general, to respond in a similar population manner.

## **C. Consultation**

No consultations were conducted with any person, group or agency.

## **D. Maps**

None

## **E. References**

Bishop Field Office, Owens Valley Unit Resource Analysis, Step II and III, 1979.  
Bishop Field Office, 1978 Stream Inventory, files.  
Bishop Field Office, 1986 Water Supply Inventory, files.  
Bishop Field Office, 1993 Assessment of Functional Condition on Streams, files.  
Heath, S.K., G. Ballard and C. McCreedy. 2001. Eastern Sierra Riparian Songbird Conservation 1998-2000 Final Report. Point Reyes Bird Observatory, Contribution No.1002. Stinson Beach, CA

## VEGETATION

### A. Affected Environment

#### Uplands

A baseline range inventory for these allotments was completed in 1977 and correlated to the recently completed 1999 NRCS soil/vegetation inventory to document plant cover and composition as well as develop updated ecological site descriptions. The allotments occur in the Northern Mojave and Great Basin Floristic Provinces. The dominant plant communities are mixed desert scrub, shadscale scrub and sagebrush/bitterbrush. Shadscale scrub is dominated by shadscale (*Atriplex confertifolia*) and budsage (*Artemisia spinescens*) with a sparse (15% or less) understory of desert needlegrass (*Achnatherum speciosum*) and Indian rice grass (*Achnatherum hymenoides*) (Barbour and Major 1977). Additional species include, but are not limited to: hop sage (*Grayia spinosa*), horsebrush (*Tetradymia canescens* and *T. axillaris*), Nevada ephedra (*Ephedra nevadensis*), winter fat (*Krashennikovia lanata*), yellow rabbitbrush (*Chrysothamnus nauseosus*), green rabbitbrush (*Chrysothamnus teretifolius*), gold bush (*Ericameria cooperi*), and cheesebush (*Hymenoclea salsola*). During years of high precipitation, annual forbs are abundant and include species from the following genera: *Cryptantha*, *Mentzelia*, *Linanthus*, *Phacelia*, as well as genera in the Asteraceae Family.

The sagebrush/bitterbrush communities that comprise small portions of West Crater Allotment contain sagebrush (*Artemisia tridentata* ssp. *tridentata*), and bitterbrush (*Purshia tridentata* var. *glandulosa*). Understory grasses such as desert needlegrass (*Achnatherum speciosum*), and Indian rice grass (*Achnatherum hymenoides*) can make up 15% of the cover at the higher elevations of the alluvial fans.

The majority (80-90%) of the upland plant communities within these allotments have not been significantly impacted by livestock grazing because of the infrequent use and low number of animals that make use of these allotments as well as the general topography and rough terrain which reduces livestock access. Generally, utilization of key forage species, e.g. desert needlegrass, hopsage, winterfat, budsage, and bitterbrush is slight to moderate and occurs in spring (March-early May). Forage capacity on these allotments is low and the plant communities are incapable of sustaining large numbers and frequent livestock use which has been shown to be detrimental to the various attributes of ecological function including plant vigor, seedling recruitment, and recovery (Clary and Holmgren 1987; Hughes 1982).

### B. Environmental Consequences

#### 1. Impacts of Proposed Action

Impacts of the Proposed Action on the vegetation within these allotments are directly affected by grazing timing, intensity, and stocking rates. Current stocking rates are moderate and do not



significantly impair the large-scale ecological function of these plant communities during non-drought years. Grazing does occur in spring which has been shown to increase shadscale (*Atriplex confertifolia*) and reduce bud sage (*Artemisia spinosa*) densities at moderate to high grazing intensities (Clary and Holmgren 1987). The key forage species which receive the most use at spring turn-out are the perennial bunch grasses. Continued grazing at current levels will affect very small portions (in the vicinity of water troughs and mineral blocks) of the allotments and not contribute to reductions in overall plant community ecological function as long as current Rangeland Health Guidelines are adhered to, e.g. 40% utilization. There may be increases in invasive weeds in proximity to high concentration use areas e.g. watering facilities and mineral blocks.

## 2. No Grazing

Under the No Grazing alternative, positive results to the ecological function (i.e. plant vigor) of these plant communities would occur.

## 3. Cumulative Impacts

Cumulative impacts may include changes in Department of Water and Power allotment management which could prompt permittees to seek out more grazing opportunities on Public Land.

## **C. Consultation**

Coordination with the California Native Plant Society, Bristlecone Chapter

## **D. Maps**

Allotment Assessment Maps

## **E. References**

Barbour, M.G., Major J. 1977. Terrestrial Vegetation of California. John Wiley and Sons. Pages 853-854.

Clary, W.B. and R.C. Holmgren 1987. Difficulties in interpretation of long-term vegetation trends. IN: Proceedings of the Symposium on Plant-Herbivore Interactions. General Technical Report INT-222. U.S. Forest Service, Intermountain Research Station, Ogden, Utah.

Hughes, L.E.. 1982. A grazing system in the Mohave Desert. Rangelands 4, 256-257.

BLM 1998 1. Riparian area management: a user guide to assessing proper functioning condition

and the supporting science for lotic areas. Technical Reference 1737-15, U.S. Department of the Interior, Bureau of Land Management, Denver, CO

BLM 1998 2. Rangeland health standards and guidelines for California and northwestern Nevada: Final EIS. California State Office, U.S. Department of the Interior, Bureau of Land Management, Sacramento, CA.

Cook, C. Wayne. 1977. Effects of Season and Intensity of Use on Desert Vegetation. Utah Agricultural Experiment Station. Bulletin 483.

Elmore, W. and B. Kauffman. 1994 Riparian and Watershed Systems: Degradation and Restoration IN: Ecological

Implications of Livestock Grazing in the West. Edited by M. Vavra, W. Laycock and R. Pieper. Society for Range Management. Denver, CO.

**Preparer(s):**

Jeff Starosta  
Anne Halford  
Terry Russi  
Joe Pollini  
Kirk Halford  
Doug Dodge

Range Conservationist  
Botanist  
Wildlife Biologist  
Recreation/Wilderness  
Archeologist  
Supervisory Resource Management  
Specialist

**Received by:** \_\_\_\_\_  
Environmental Coordinator

**Date:** \_\_\_\_\_

## **DECISION NOTICE AND FINDING OF NO SIGNIFICANT IMPACT**

I have reviewed this environmental assessment including the explanation and resolution of any potentially significant environmental impacts. I have determined that the proposed action will not have any significant impacts on the human environment and that an EIS is not required.

There will be no effect on threatened or endangered species as a result of the action.

I have determined that the proposed project is in conformance with the Bishop Resource Management Plan, which was approved March 25, 1993. This plan has been reviewed, and the proposed action conforms with the land use plan terms and conditions as required by 43 CFR 1610.5.

Furthermore, it is my decision to implement the proposed action and issue 10-year grazing permits with the currently used standard grazing stipulations to the grazing operators for the three allotments. Livestock grazing management on these three allotments will remain unchanged from past use, but subject to adherence with the Central California Rangeland Health Standards and Guidelines and RMP decisions pertaining to livestock use. The Rangeland Health Assessments conducted, indicate that there are no significant environmental impacts from current use and the allotments all meet the Rangeland Health Standards.

**Authorized Official:**

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Field Manager, Bishop Field Office

**Date:** \_\_\_\_\_